CHAPTER 8

SAFETY AND FIRE PREVENTION

GENERAL

Accidents can occur in many ways in a workplace unless personnel are properly trained in fire and accident prevention and practice safety at all times. Teach personnel to *THINK SAFETY* by using OJT and visual aids.

THE FOOD ADVISOR'S ROLE IN SAFETY

The FA and TISO must work with the installation Safety Officer to ensure that a viable safety program is maintained. Accidents must be reported to the Safety Officer as described in AR 385-40. The safety office maintains records of accidents and can provide information on recurring accidents. The FA should keep track of trends or accident types and make necessary changes to operations or training to reduce injuries or damage to equipment. Do not wait for accidents to happen before you initiate action. Make on-the-spot corrections if you observe unsafe conditions or acts. Safety and fire prevention training in contractor-operated facilities is the responsibility of the contractor.

DINING FACILITY SAFETY

The FSS must ensure that safety is included in all training and in the day-to-day operation of his facility. Accidents will occur even when personnel are well-trained in how to prevent them. Food service personnel should know what to do when accidents happen. The FSS must include an SOP on first aid and fire fighting in the dining facility safety program. Some commonsense rules for safety are described below.

Storerooms

DO NOT STORE CHEMICALS IN FOOD STORAGE AREAS OR NEAR FOOD. Store containers by contents, size, and type. Use sturdy shelves, and place heavy or larger items such as cases, large bags, or number 10 cans on lower shelves. Have shelving low enough so that personnel can easily see the contents. Make sure personnel--

- Use a well-braced ladder to reach items on high shelves.
- Keep the aisles clear and the floor clean and dry.
- Get a firm grip on containers before lifting.
- Bend your knees, keep your back straight, and use thigh and shoulder muscles for lifting.
- Keep the load close to your body, walk normally, and ease the load to a resting place.
- Make sure personnel can see where they are going. BE ALERT.
- Get help if needed.
- CO_2 containers must be secured with a chain in an upright position to preclude damage to the dispensing head and possible injury to personnel.

Cooking and Serving Areas

Burns, bumps, and falls often happen in the cooking and serving areas. Make sure personnel --

- Turn the handles of pots and pans so that they point to the back or side of the range.
- Close oven doors when not inserting or removing pans.
- Use pot-handling pads for hot items.
- Keep the floors under, around, and behind appliances clean.
- Clean up spills at once.
- Clean grease filters frequently.
- Give a warning when passing servers.
- Change steam table inserts carefully.
- Do not rush when carrying hot pans of food.
- Do not spill grease on open flames.

Knives

Knives are probably the most dangerous items personnel use. Constantly stress knife safety during OJT. When personnel know which knife to use and how to use and care for it, there will be fewer accidents. Some safety rules to follow when using knives are--

- Make sure knives are kept sharpened. Use proper sharpening procedures, as shown in Figure 16-5 (page 16-9) in this manual.
- Use a cutting board and not the palm of the hand.
- Cut away from the body.
- Do not try to catch a falling knife.
- Do not use knives to open cans, to punch holes in cans, or to pry off lids.
- Be very careful when carrying a knife. Always carry knives at your side next to your leg.
- Wash knives separately from other utensils.
- Wash and store knives *IMMEDIATELY* after use.
- Store knives in a metal or plastic slotted rack.

Other Equipment

NEVER let personnel use equipment until they are trained to operate it. ALWAYS follow the manufacturer's operating, safety, and maintenance instructions. If equipment is not working correctly, have the engineers check it--do not tinker. Table 8-1 (page 8-2) lists hazards associated with different sources of energy and some safety precautions.

Cleaning Products

Cleaning products can be very dangerous substances when not used correctly. Many cleaning products are also hazardous chemicals. You should--

- Ensure personnel read labels and follow all instructions before using.
- Ensure personnel do not mix cleaning products.
- Ensure personnel are trained.
- Ensure that all personnel use appropriate protective clothing and equipment provided for their protection.

SAFETY IN CLASS I OPERATIONS

Accidents cost money through the loss of man-hours and damage to or destruction of food and equipment. The resulting loss of personnel, subsistence, and equipment could prevent Class I supplies from being issued to supported units in a timely manner. Detailed information on safety is in DOD 4145. 19-R-1. The FSS should use the checklist in Table 8-2 (pages 8-3 through 8-6) to evaluate the dining facility for possible safety hazards. Table 8-3 (pages 8-6 and 8-7) provides general rules that should be included in the safety program.

Table 8-1. Sources of energy, their dangers, and safety precautions

SOURCE	DANGER	PRECAUTIONS
Gas	Explosion, Fire, Burns, Toxic Fumes	Do not put flammable material near flame. Air the room before you light the pilot.
Steam	Burns, Explosion	Make sure gauges are working. Open doors or lids as instructed.
Electricity	Shock	Do not handle electrical equipment with wet hands. Keep grease and water out of wiring. Unplug equipment before you clean it. Do not stand on a wet floor when you operate equipment.

Table 8-2. Accident prevention checklist

Stairs, Ramps, and Ladders	☐ Are stairs and slopes clearly marked and illuminated? ☐ Do stairs have abrasive surfaces to prevent slipping and falling? ☐ Are handrails on open sides of stairways provided? ☐ Are center handrails provided for wide stairs? ☐ Are stairways kept unobstructed? ☐ Is there a 7-foot clearance over each step? ☐ Are the slopes of ramps set to provide maximum safety--not too steep? ☐ Are ladders maintained in good condition and inspected frequently? ☐ Do ladders have nonslip bases?
Ventilation	☐ Is the ventilation adequate in receiving, storage, pot and pan and dishwashing areas, and in walk-in coolers and freezers? ☐ Are vent filters and fresh-air intakes provided in food-preparation, serving, and dining areas? ☐ Are all fans and their moving parts shielded or guarded? ☐ Is gas equipment properly vented?
Electrical Equipment	☐ Are ground fault circuit interrupters installed near sinks and work areas? ☐ Is electrical equipment properly grounded, wired, and fused? ☐ Is electrical equipment of approved type and installed properly? ☐ Does electrical equipment meet the National Electrical Code specifications or local ordinances and bear the seal of the Underwriter's Laboratories? ☐ Are regular inspections of equipment and wiring made by an electrician? ☐ Are electrical switches readily accessible in emergencies? ☐ Are switches located so that employees do not have to lean on or against metal when reaching for them? ☐ Are cords maintained without splices, cracks, or worn areas? ☐ Is wiring kept off surfaces subject to vibration, off floors, and out from under equipment? ☐ Is electrical equipment protected against the entrance of water? ☐ Are weatherproofed cords and plugs provided for outdoor equipment? ☐ Are wet floors and areas subject to flooding avoided for placement of electrical equipment? ☐ Are protective pads or platforms provided for people who use or vend from machines to stand on? ☐ Are service cords long enough to eliminate the need for extension cords? Is the kitchen equipped with retracting reel cords from the ceiling? ☐ Are all switches, junction boxes, and outlets covered? ☐ Does all equipment with cord-and-plug connections have grounded connections?
Lighting	☐ Is lighting adequate in all areas? ☐ Are light fixtures, bulbs, and tubes protected with protective shields or shatterproof? ☐ Is proper heat-proof lighting provided over cooking areas, in vent hoods, and so on?

Table 8-2. Accident prevention checklist (continued)

Hot Water Heating	☐ Are safety devices, such as temperature and pressure relief valves or energy cutoffs, provided to prevent explosion of pressurized water heating systems? ☐ Do safety valves meet the standards of the American Standards Association or the American Society of Mechanical Engineers? ☐ Is hot water temperature properly controlled in lavatories and sinks, and are mixing faucets provided to prevent scalding?
Employee Practices	☐ Are all employees aware of hazards existing in their work areas? ☐ Are employees properly instructed on placement of hands to avoid injury when handing potentially hazardous devices such as slicers? ☐ Do employees make use of all guards, hot pads, railings, and other protective devices available to them? ☐ Do employees wear proper shoes which are nonskid and will protect feet from injury? ☐ Do employees wear clothing that cannot get caught in mixers, cutters, grinders, fans, or other equipment? ☐ Is at least one employee on each shift trained in emergency first aid techniques? ☐ Is care exercised when using plastic aprons or gloves near open flames or extreme heat?
Fire Prevention Equipment	☐ Are fire extinguishers conveniently located where fires are most likely to occur? ☐ Are extinguishers the proper type and size to control a fire? ☐ Have employees been instructed in the effective use of extinguishers and automatic washdown systems? ☐ Are extinguishers in plain sight? ☐ Are extinguishers kept fully charged and inspected weekly for damage? ☐ Are sprinklers or automatic alarms installed if required? ☐ Does all fire prevention equipment comply with local fire prevention agency requirements?
Floors	☐ Are all floors in safe condition--free from broken tile and defective floorboards, worn areas, and items that may cause people to trip or fall? ☐ Are spills and debris removed from the floor immediately? ☐ Where floors are frequently wet, are heavy traffic areas provided with nonskid mats? ☐ Are floors mopped adequately and provided with a protective or nonskid finish to prevent slipping? ☐ Are adequate floor drains provided and properly covered with gratings? ☐ Are carpets securely tacked or otherwise fastened in place to prevent people from tripping over raised edges?
Serving Area and Dining Room	☐ Are serving counters and tables free of broken parts, wooden or metal slivers, and sharp edges or corners? ☐ Is all tableware regularly inspected for chips, cracks, or flaws? Are defective pieces discarded in a safe manner?

Table 8-2. Accident prevention checklist (continued)

Serving Area and Dining Room *(continued)*	☐ Is the traffic flow coordinated to prevent collisions while people are carrying trays or obtaining food? ☐ Are pictures and wall decorations securely fastened to walls? ☐ Are ceiling fixtures firmly attached and in good repair?
Doors and Exits	☐ Are sidewalks and entrance and exit steps kept clean and in good repair? ☐ Will all exits open from the inside without keys to allow escape from the building? ☐ Can an exit be reached from every point in the building without having to pass through an area of high potential hazard? ☐ Are routes to exits and the exits themselves clearly marked? ☐ Are passages to exits kept free of equipment and materials? ☐ Are all exits outward opening? ☐ Are doors hung so they do not open into passageways where they could cause accidents? ☐ Are doors installed between kitchen and dining areas? ☐ Are exits properly marked (signs)? ☐ Do electrical exit signs operate properly?
Receiving Area	☐ Are employees instructed in correct opening, lifting, and storing methods? ☐ Are adequate tools available for opening and moving supplies?
Storage Areas	☐ Is there sufficient storage space so that nothing is stored on floors, behind doors, in corridors, or on stairways? ☐ Are shelves adequate to bear the weight of the items stored? ☐ Are heavy items stored on lower shelves and lighter materials above? ☐ Is a safe ladder or step stool provided for reaching higher shelves? ☐ Are portable and stationary storage racks in safe condition--free from broken or bent shelves and standing solidly on legs? ☐ Is there a safety device in walk-in coolers to permit exit from the inside, and is there a light switch inside?
Hazardous Materials	☐ Are toxic materials and hazardous substances stored and handled properly? ☐ Are combustible and flammable materials stored and handled properly?
Waste Storage Areas	☐ Are garbage and waste containers constructed of leakproof material? ☐ Are containers adequate in number and size? ☐ Are containers on dollies or other wheeled units to eliminate lifting by employees? ☐ Are disposal-area floors and surroundings kept clean and clear of refuse?
Food Preparation Area	☐ Is adequate isle space provided between equipment to allow reasonable work movement and traffic? ☐ Are hot pads, spatulas, or other equipment provided for use with stoves, ovens, and other hot equipment? ☐ Is proper storage provided for knives and other sharp instruments? ☐ Are machines properly safety-guarded?

Table 8-2. Accident prevention checklist (continued)

Food Preparation Area ***(continued)***	☐ Do employees make use of tampers, hot pads, safe knife-storage devices, and machine guards provided for their protection? ☐ Are knives and other blades kept sharp? ☐ Are employees properly instructed in the operation of machines, mixers, grinders, choppers, dishwashers, and so on? ☐ Are mixers in safe operating condition? ☐ Are steam tables regularly maintained by competent employees?
Utensil-Washing Area	☐ If conveyor units are used to move soiled items, are edges guarded to avoid catching people's fingers or clothing? ☐ Are portable racks in safe operating condition- wheels and casters working, shelves firm? ☐ Are dish racks kept off the floor to prevent people from tripping over them? ☐ Are racks, hooks, and gloves provided so that employees do not have to put their hands into sanitizing baths of hot water or chemicals? ☐ Are drain plugs mechanically operated or provided with chains so that employees can drain sinks without placing hands in sanitizing solutions?

Table 8-3. General rules for safety

HANDLING AND LIFTING
1. Wear gloves when handling crates or sharp or rough materials. 2. Wear slip-resistant shoes in wet locations and steel-toe shoes in warehousing and stocking areas. 3. Wear helmets or hard hats in areas where Class I supplies are being lifted or hoisted. 4. When possible, use materials-handling equipment to move heavy supplies. 5. When lifting supplies by hand, use proper lifting techniques to prevent back injuries.
LOADING AND UNLOADING
1. Position bridge plates and mobile ramps correctly, and do not exceed load capacities. 2. Chock rear wheels of trucks and trailers, and use safety jacks when trailers are disconnected from their tractors. 3. Check the truck flooring for brakes and weakness before loading and unloading. 4. Remove loose straps and protruding nails from containers before unloading. 5. Never block aisles, doorways, and windows.

Table 8-3. General rules for safety (continued)

USING TOOLS AND MHE

1. Use the right tool for each job. Use nail-pullers for opening boxes, wire-cutters for cutting straps or wire, and hammers for driving nails.
2. Ensure that personnel are properly trained to use tools and equipment.
3. Follow safety precautions, especially when using power tools or MHE.
4. Use only MHE with the rated load capacity for the supplies being moved.
5. Maintain and service MHE as directed in the manufacturer's organizational and operator's maintenance manual.
6. Refuel MHE only in designated areas and only with the engine off.
7. Park MHE only in an approved area.
8. Use only electric-powered MHE inside a warehouse.
9. Establish a battery-charging area for MHE.

USING STORAGE AREAS

1. Always have and maintain adequate lighting.
2. Clean up spills immediately.
3. Use yellow 3-inch stripes to mark railings and stair risers, and use yellow and black 3-inch stripes to mark pit and platform edges and bollards to mark corners or obstructions.
4. Install door latches or locking devices on freezer rooms to permit the door to be opened from the inside. Also, install bells which can be activated inside freezer areas. These should be checked weekly to ensure that they are operable. Mount an axe marked with reflecting paint in each freezer room. Also, mount emergency lighting above exits.

PALLETIZING SUBSISTENCE

1. Use only containers, pallets, and dunnage that are in good condition.
2. Stack pallet loads with a 2-inch clearance on all sides. The clearance between stacks will permit air circulation.
3. Limit the height of the stacks based on floor load limits and the sturdiness of the containers. Where installed, maintain an 18-inch clearance below sprinklers and around lighting and heating fixtures. Regardless of the height of the stack, maintain a 36-inch clearance between stock and the ceiling when stacking heights exceed 15 feet or when a sprinkler system is not available.
4. When a space must be left on the pallet due to the configuration of the load, load the pallets with a four-point level top. Leave spaces only in the center. Place partially loaded pallets on the top of a stack, or place the supplies on a rack.

PREVENTING FIRES

1. For interior storage, post NO SMOKING signs in areas where smoking is not permitted.
2. Keep combustibles away from heat sources.
3. Collect trash daily, and place it in proper refuse containers.
4. Mark fire aisles and exits clearly, and ensure that they are not blocked.
5. Ensure that portable fire extinguishers are readily available and in good working order. Assign an operator to use each extinguisher in case of fire and to inspect it at least once monthly.

FIRE PREVENTION

The TISO and FSS must stress fire prevention during training and daily operations. Fire prevention checks should be included in your safety checklists.

There are three classes of fire with which you must be familiar. They are--

- Class A Fires - Ordinary combustibles, such as wood, paper, or cloth.
- Class B Fires - Flammable liquids and grease.
- Class C Fires - Electrical fires.

Three things must be present to have a fire. They are known as the fire triangle. These are--

- Oxygen
- Heat source
- Fuel

Fire extinguishers are classified by what they put out. Each extinguisher breaks a different link of the fire triangle. Class A extinguishers cool the source of the fire and eliminate the heat source. Class B extinguishers blanket the source with foam or chemicals to cover the fuel source. Most fire extinguishers used in a dining facility are rated for more than one type of fire. Because a fire within a dining facility may include one or more of the classes, a multipurpose, dry-chemical extinguisher would be the most effective and should be readily available. The post installation fire department should be consulted when classes in fire prevention are planned or given at your facility.